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T-D

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/274,194 03/22/99 LANG

J LAM1P083A

IM62/1024
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EXAMINER

BROWN, C

ART UNIT

PAPER NUMBER

1765

DATE MAILED:

10/24/00

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/274,194

Applicant(s)
Lang et al.

Examiner
Charlotte A. Brown

Group Art Unit
1765



☒ Responsive to communication(s) filed on Mar 22, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-19 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 6,057,239) in view of Kikuchi et al. (US 5,399,202).

From line 7 to the end of column 3, Wang discloses a dual damascene process using sacrificial spin-on materials. A sacrificial layer of spin-on material is applied over a semiconductor substrate. The spin-on material is an anti-reflective coating material and can be a low dielectric constant material such as benzocyclobutene (BCB), HSQ, spin-on glass (SOG), and FLARE. A layer of photoresist is then spin coated on top of the sacrificial layer and exposed through a mask containing a wiring trough pattern. This reads on the applicant's limitation of patterning the photoresist material. The photoresist is removed using a liquid medium.

Unlike the claimed invention, Wang does not disclose a method wherein the photoresist material is removed with dimethyl sulfoxide.

Kikuchi discloses a method for peeling a resist layer. A substrate is provided with a photoresist layer. The substrate is immersed in an ultrasonic peeling bath. The peeling liquid is an aprotic solvent of either dimethyl sulfoxide, propylene carbonate, or N-methyl-2-pyrrolidone.

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The ultrasonic bath is filled with a pilling liquid which is subjected to a temperature adjustment to 60°C. The photoresist of the substrate is peeled off while applying ultrasonic waves to the peeling liquid from an ultrasonic generator provided from the bottom of the bath. The substrate is held in the bath for about 30 seconds or less for complete peeling of the photoresist (Column 11, lines 57-68).

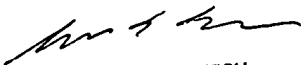
It is the Examiner's position that a person having ordinary skill in the art would have found it obvious to modify Wang by immersing the substrate in an ultrasonic bath of dimethyl sulfoxide for removal of the photoresist layer as disclosed by Kircuchi therein because Wang is not particular about the liquid medium used for removal of the photoresist layer and therefore any liquid medium would have been anticipated in order to produce an expected result.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (US 5,633,175)

4. Any inquiry concerning this communication from the Examiner should be directed to Charlotte A. Brown whose telephone number is (703) 305-0727.

CAB

October 20, 2000


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700